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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the adsorption member used for the mimeograph airline printer which loops around the punched master and performs double-sided printing or one side printing, and this mimeograph airline printer.

[0002]

[Description of the Prior Art] As the printing approach simpler than before, digital type sensible-heat mimeograph printing is known. This the thermal head by which the detailed heater element has been arranged at the single tier A sensible-heat mimeograph master According to image information, heating melting punching of the master is carried out by conveying a master, making it contact for (calling it a "master" hereafter), and making a heater element energize in pulse. After looping the peripheral face of a porous cylinder-like printing cylinder around this master, a printing image is formed by making ink penetrate and making it transfer to a print sheet from the punched part.

[0003] In this mimeograph airline printer, ink is supplied to the peripheral face of the inking roller formed in the interior of a printing cylinder. Since contact the peripheral face of an inking roller to the inner skin of a printing cylinder by pressing a printing cylinder peripheral face, ink is made to ooze from a printing cylinder aperture and a master punch station and it is made to transfer to a print sheet by press members, such as a press roller Under hot environments with good case where a print speed is low speed and fluidity of ink, while ink oozes out in large quantities and image concentration becomes high, a print sheet will stick to the peripheral face of a printing cylinder according to the adhesion of ink.

[0004] In order to prevent above-mentioned fault, in the conventional mimeograph airline printer, since a print sheet is exfoliated from a printing cylinder peripheral face, an exfoliation pawl is arranged near [through which the tip of a print sheet passes] the printing cylinder peripheral face, this exfoliation pawl is inserted between a print sheet and a printing cylinder peripheral face, and the approach of exfoliating using the waist of a print sheet is adopted.

[0005] By the way, in order to reduce the consumption of a print sheet in recent years, double-sided printing which prints to both sides of a print sheet has come to occupy the great portion of printing. although this double-sided printing divided [from which double-sided printed matter is obtained] and it came out of it by turning over and ****(ing) a print sheet and printing by on the other hand being alike after it ****(ed) the print sheet loaded into the feed section in the printing section and printed on the whole surface, set to the feed section again the print sheet to which paper was delivered once, and the trouble that it is troublesome in the activity of arranging the print sheet after one side printing was. Moreover, since ink is not fully drying the printed matter after printing termination, if it is going to print at the rear face immediately Since a conveyance roller, a press roller, etc. are forced on the image section and a printing image is become dirty or confused, When the most, after several hours or more passed, when printing to a rear face was performed and there was the solid image section especially, it was required to carry out long duration desiccation, and after the next day came, printing to a rear face was performed. Thus, since it had to wait for it for a long time and double-sided printing moreover

performed 2 times of **** until it printed at the rear face, it required twice as many time amount as this compared with one side printing also in net printing time amount, and had the trouble of taking time amount too much. Then, the printing cylinder of a pair is made to counter, it arranges, and the mimeograph airline printer which obtains double-sided printed matter at one process is indicated by JP,6-71996,A and JP,6-135111,A by carrying out the pressure welding of each printing cylinders mutually.

[0006] Moreover, in the conventional mimeograph airline printer, when it is left without using equipment over long duration, the ink in a printing cylinder evaporates, when printing next, ink may be insufficient and maculature may occur. Generally emulsion ink the oily type which keeps this problem to the minimum and which sake [a type], evaporates and is hard to dry, or water-in-oil type (W/O mold; moisture is distributing to part for oil) type is used. However, by the time this ink will be in the so-called condition which dirt does not generate of having carried out osmosis desiccation even if the ink transferred to the print sheet at the time of printing permeates into a print sheet and it grinds it against a finger etc. since it is hard to dry, it will need a certain amount of time amount. If the following print sheet is loaded on a printed form before this osmosis desiccation is completed, it will transfer to the rear face of the following print sheet into which the ink of the image section of a printed form was loaded, and the fault of the so-called flesh-side projection will occur. It is especially easy to generate this flesh-side projection at the time of printing of a solid image with many amounts of ink transition. The technique of preventing generating of flesh-side projection by decreasing the amount of ink transferred to a print sheet then, to JP,4-361043,A The technique of preventing generating of flesh-side projection by decreasing the amount of ink which makes the heating element of a thermal head small and is transferred to a print sheet moreover, to JP,4-265759,A Furthermore, an intermediate-screen layer is prepared between the support cylinder object of a printing cylinder, and a mesh screen layer, and the technique of diffusing ink is indicated by JP,63-59393,B, respectively so that ink may not transfer in large quantities locally to a print sheet.

[0007]

[Problem(s) to be Solved by the Invention] However, since the amount of exudation of ink increases and it transfers to a lot of ink to a print sheet under the case where a print speed is low as mentioned above, or hot environments, the scratch dirt with which the contact marks of an exfoliation pawl remain in the printing side of a print sheet will be generated by contact to an exfoliation pawl and a print sheet. Then, although the technique of reducing scratch dirt by conveying lengthening and removing a print sheet from a printing cylinder peripheral face by the adsorption transport device prepared in the downstream of an exfoliation pawl is indicated by JP,60-148864,A after exfoliating the tip of a print sheet from a printing cylinder peripheral face by the exfoliation pawl When this technique is applied to the technique indicated by above-mentioned JP,6-71996,A and above-mentioned JP,6-135111,A, a printing side will be ground against conveyance members, such as an adsorption conveyance belt, and there is a trouble that grinding dirt will be generated.

[0008] Moreover, with the technique indicated by JP,4-361043,A, JP,4-265759,A, and JP,63-59393,B, respectively, there is no change in making it transfer in the form which heaps up ink from the punch station of an engraved master to a print sheet, when it prints continuously, the drying time of ink is insufficient, and the effectiveness of reduction of flesh-side projection or prevention is not attained. Then, although the technique of preventing flesh-side projection by inserting a printed form in the equipment which has the surplus ink transfer paper from which the ink of the surplus supplied to the printed form is removed manually is indicated by JP,2-16053,A, the mimeograph airline printer which prevents flesh-side projection automatically is not yet proposed.

[0009] This invention solves the above-mentioned trouble, prevents generating of grinding dirt at the time of 1 process double-sided printing, prevents generating of flesh-side projection at the time of one side printing, and aims at offer of the mimeograph airline printer which can obtain a good printing image.

[0010]

[Means for Solving the Problem] The 1st ink supply means which invention according to claim 1 is

prepared in the interior of the 1st printing cylinder which can rotate freely with porosity, and the 1st printing cylinder, and supplies ink to the inner skin of the 1st printing cylinder, It is prepared free [attachment and detachment] to the peripheral face of the 1st printing cylinder, and the print sheet with which it was fed is pressed to the peripheral face of the 1st printing cylinder. The press member which transfers the ink supplied from the 1st ink supply means to the 1st field of this print sheet and which can be rotated, The 1st exfoliation means which it is arranged [1st] free [rotation] near the peripheral face of the 1st printing cylinder, and makes said print sheet exfoliate from the peripheral face of the 1st printing cylinder, The 2nd printing cylinder which is the cylinder object which can rotate freely with the porosity prepared in the print sheet conveyance direction downstream of the 1st printing cylinder arrangement location, and was arranged so that the peripheral face might counter with the 2nd field of said print sheet, The 2nd ink supply means which is prepared in the interior of the 2nd printing cylinder, and supplies ink to the inner skin of the 2nd printing cylinder, The 2nd exfoliation means which it is arranged [2nd] free [rotation] near the peripheral face of the 2nd printing cylinder, and makes said print sheet exfoliate from the peripheral face of the 2nd printing cylinder, The adsorption drum which is looped around the adsorption member which the peripheral face is prepared free [attachment and detachment] to the peripheral face of the 2nd printing cylinder, and adsorbs ink on the peripheral face, Said print sheet with which it was prepared in the location between the 1st printing cylinder arrangement location and the 2nd printing cylinder arrangement location, and printing was made by the 1st printing cylinder in the 1st field so that said 1st field may counter with the peripheral face of said adsorption drum The 1st form conveyance means conveyed towards between said adsorption drum and 2nd printing cylinder, It is prepared in the print sheet conveyance direction downstream of the 2nd printing cylinder arrangement location, and the 2nd form conveyance means which turns to a paper output tray said print sheet with which printing was made by the 2nd printing cylinder in the 2nd field, and conveys it is provided. When the print sheet is conveyed with the 1st form conveyance means and said print sheet is conveyed between the 2nd printing cylinder and said adsorption drum after the 1st field of said print sheet was printed with the 1st printing cylinder While making the peripheral face of said adsorption drum contact the peripheral face of the 2nd printing cylinder and printing to the 2nd field of said print sheet After adsorbing the ink of the surplus supplied to the 1st field of said print sheet from the 1st printing cylinder by said adsorption member, It is characterized by exfoliating said print sheet [finishing / double-sided printing] from the peripheral face of the 2nd printing cylinder, conveying said exfoliative print sheet with the 2nd form conveyance means, and discharging to said paper output tray with the 2nd exfoliation means.

[0011] The 1st ink supply means which invention according to claim 2 is prepared in the interior of the 1st printing cylinder which can rotate freely with porosity, and the 1st printing cylinder, and supplies ink to the inner skin of the 1st printing cylinder, It is prepared free [attachment and detachment] to the peripheral face of the 1st printing cylinder, and the print sheet with which it was fed is pressed to the peripheral face of the 1st printing cylinder. The press member which transfers the ink supplied from the 1st ink supply means to the 1st field of this print sheet and which can be rotated, The 1st exfoliation means which it is arranged [1st] free [rotation] near the peripheral face of the 1st printing cylinder, and makes said print sheet exfoliate from the peripheral face of the 1st printing cylinder, The 2nd printing cylinder which is the cylinder object which can rotate freely with the porosity prepared in the print sheet conveyance direction downstream of the 1st printing cylinder arrangement location, and was arranged so that the peripheral face might counter with the 2nd field of said print sheet, The 2nd ink supply means which is prepared in the interior of the 2nd printing cylinder, and supplies ink to the inner skin of the 2nd printing cylinder, The 2nd exfoliation means which it is arranged [2nd] free [rotation] near the peripheral face of the 2nd printing cylinder, and makes said print sheet exfoliate from the peripheral face of the 2nd printing cylinder, The press drum which the peripheral face is prepared free [attachment and detachment] to the peripheral face of the 2nd printing cylinder, and adsorbs ink by the peripheral face, A cleaning means established near the peripheral face of said press drum to clean the peripheral face of said press drum, Said print sheet with which it was prepared in the location between the 1st printing cylinder arrangement location and the 2nd printing cylinder arrangement location, and

printing was made by the 1st printing cylinder in the 1st field so that said 1st field may counter with the peripheral face of said press drum. The 1st form conveyance means conveyed towards between said press drum and 2nd printing cylinder. It is prepared in the print sheet conveyance direction downstream of the 2nd printing cylinder arrangement location, and the 2nd form conveyance means which turns to a paper output tray said print sheet with which printing was made by the 2nd printing cylinder in the 2nd field, and conveys it is provided. When the print sheet is conveyed with the 1st form conveyance means and said print sheet is conveyed between the 2nd printing cylinder and said press drum after the 1st field of said print sheet was printed with the 1st printing cylinder. While making the peripheral face of said press drum contact the peripheral face of the 2nd printing cylinder and printing to the 2nd field of said print sheet. The ink of the surplus supplied to the 1st field of said print sheet from the 1st printing cylinder. After adsorbing by the peripheral face of said press drum, it is characterized by exfoliating said print sheet [finishing / double-sided printing] from the peripheral face of the 2nd printing cylinder, conveying said exfoliative print sheet with the 2nd form conveyance means, and discharging to said paper output tray with the 2nd exfoliation means.

[0012] Invention according to claim 3 is further characterized by forming the surface layer which becomes the peripheral face of said press drum from a low coefficient-of-friction member in a mimeograph airline printer according to claim 2.

[0013] Invention according to claim 4 is characterized by providing further a heating means to heat said press drum, and a temperature control means to control the heating temperature of said heating means in a mimeograph airline printer according to claim 2 or 3.

[0014] An ink supply means for invention according to claim 5 to be prepared in the interior of the printing cylinder which can rotate freely with porosity, and said printing cylinder, and to supply ink to the inner skin of said printing cylinder. The press member prepared free [attachment and detachment] to the peripheral face of said printing cylinder is provided. In the mimeograph airline printer which presses the print sheet with which it was fed to the master of said printing cylinder by said press member, and prints to a print sheet after looping said printing cylinder around an engraved master. The adsorption drum which looped around the adsorption member which adsorbs a part for the surplus of the ink which was prepared in the print sheet conveyance direction downstream of said printing cylinder arrangement location, and was supplied to said print sheet from said printing cylinder on the peripheral face. A printed form conveyance means to convey the printed form which it was prepared [form] in the location between said printing cylinder arrangement location and said adsorption drum arrangement location, and had ink imprinted towards said adsorption drum so that the printing side may counter with the peripheral face of said adsorption drum. It is prepared free [attachment and detachment] to the peripheral face of said adsorption drum, and is characterized by providing a printed form press means to press said printed form conveyed by said printed form conveyance means to said adsorption drum.

[0015] Invention according to claim 6 is characterized by the adsorption member used for a mimeograph airline printer according to claim 1 or 5 consisting of what mixed Japanese paper fiber or Japanese paper fiber, and a synthetic fiber.

[0016] Invention according to claim 7 is characterized by providing further a hydrophobic member spreading means to give hydrophobicity to said adsorption member in a mimeograph airline printer according to claim 1 or 5.

[0017] Invention according to claim 8 is characterized by performing hydrophobing processing to the adsorption member used for a mimeograph airline printer according to claim 1 or 5.

[0018] Invention according to claim 9 is characterized by performing hydrophobing processing to the adsorption member according to claim 6.

[0019] Invention according to claim 10 is characterized by providing further a heating means to heat said adsorption drum, and a temperature control means to control the heating temperature of said heating means in a mimeograph airline printer according to claim 1 or 5.

[0020]

[Function] According to invention according to claim 1, the print sheet which had the 1st field printed with the 1st printing cylinder. While exfoliating from the 1st printing cylinder with the 1st exfoliation

means, being conveyed with the 1st form conveyance means and printing the 2nd field with the 2nd printing cylinder After removing excessive ink from the 1st field and exfoliating from the 2nd printing cylinder with the 2nd exfoliation means by the adsorption member, it is discharged by the paper output tray with the 2nd conveyance means.

[0021] According to invention according to claim 2, the print sheet which had the 1st field printed with the 1st printing cylinder While exfoliating from the 1st printing cylinder with the 1st exfoliation means, being conveyed with the 1st form conveyance means and printing the 2nd field with the 2nd printing cylinder After removing excessive ink from the 1st field and exfoliating from the 2nd printing cylinder with the 2nd exfoliation means on a press drum, it is discharged by the paper output tray with the 2nd conveyance means.

[0022] According to invention according to claim 3, the print sheet which had the 1st field printed with the 1st printing cylinder While exfoliating from the 1st printing cylinder with the 1st exfoliation means, being conveyed with the 1st form conveyance means and printing the 2nd field with the 2nd printing cylinder After removing excessive ink from the 1st field and exfoliating from the 2nd printing cylinder with the 2nd exfoliation means on the press drum on which the surface layer which consists of a low coefficient-of-friction member was formed, it is discharged by the paper output tray with the 2nd conveyance means.

[0023] According to invention according to claim 4, since a press drum is heated, the temperature of the 1st field of the print sheet which contacts a press drum rises.

[0024] According to invention according to claim 5, the ink of the surplus transferred to the print sheet is adsorbed by the adsorption member when a printed form is pressed by the adsorption drum with a printed form press means.

[0025] According to invention according to claim 6, the ink of the surplus transferred to the print sheet is adsorbed by the adsorption member which consists of what mixed Japanese paper fiber or Japanese paper fiber, and a synthetic fiber.

[0026] According to invention according to claim 7, a hydrophobic member spreading means gives a hydrophobic member to an adsorption member.

[0027] According to invention according to claim 8, hydrophobing processing is performed to the adsorption member.

[0028] According to invention according to claim 9, the ink of the surplus transferred to the print sheet is adsorbed by the adsorption member which consists of what mixed the Japanese paper fiber or Japanese paper fiber to which hydrophobing processing was performed, and a synthetic fiber.

[0029] According to invention according to claim 10, since an adsorption drum is heated, the temperature of the field of the print sheet which contacts an adsorption drum rises.

[0030]

[Example] In drawing 1 which shows the 1st example of this invention, the rotation drive of the printing cylinder 1 as the 1st printing cylinder is carried out by the printing cylinder driving means which is supported free [rotation] by the pivot 2 which served as the ink delivery pipe, and is not illustrated. On the peripheral face of a printing cylinder 1, the stage section 3 arranged in parallel with a pivot 2 is arranged. The clamper 4 which pinches the point of a master in the stage section 3 is pivoted on the peripheral face of a printing cylinder 1 by shaft 4a, and rotates with the closing motion means which is not illustrated. Moreover, the ink supplied from an ink supply means 5 for the aperture of the shape of a mesh which is not illustrated to be formed in the peripheral face of a printing cylinder 1, and to mention later oozes out from this aperture, passes through the punch station of a master, and transfers it to a print sheet.

[0031] The ink supply means 5 as 1st ink supply means is arranged in the interior of a printing cylinder 1. The inking roller 6 by which a rotation drive is carried out in this direction synchronizing with a printing cylinder 1 with the driving force means of communication which the ink supply means 5 is supported by the side plate which is not illustrated, and is illustrated [belt / neither / a gear nor], It mainly consists of a doctor roller 7 arranged so that the peripheral face might be slightly located with a clearance with the peripheral face of an inking roller 6, and an ink pipe 8 which turns and supplies the

ink supplied from a pivot 2 to the contiguity section of an inking roller 6 and the doctor roller 7. The ink supply means 5 forms ink ***** 9 by storing the ink supplied to the wedge-shaped space formed between an inking roller 6 and the doctor roller 7 from the ink pipe 8. In the ink of this ink ***** 9, the ink supply means 5 forms the thin layer of ink on the peripheral face of an inking roller 6, and supplies ink to the inner skin of a printing cylinder 1.

[0032] The platemaking means 10, the cutting means 11, and the master guide plate 12 grade are arranged by the lower left direction of a printing cylinder 1. The platemaking means 10 mainly consists of a platen roller 13 by which a rotation drive is carried out with the stepping motor which pivot 13a is supported at the side plate which is not illustrated, enabling free rotation, and is not illustrated, and a thermal head 14 by which a pressure welding is carried out to a platen roller 13 with the energization means which possesses two or more heater elements and is not illustrated. The platemaking means 10 is conveyed carrying out heating melting punching of the master 15 pulled out from master roll 15a supported free [rotation] by core material 15b. The cutting means 11 consists of upper cutting-edge 11a rotated by the migration means which is not illustrated, and lower cutting-edge 11b of immobilization, and the master 15 engraved with the platemaking means 10 is cut by predetermined die length. It turns and shows the master guide plate 12 to a clamper 4 to the engraved master 15.

[0033] the upper right direction of a printing cylinder 1 -- a resist roller pair -- 16 is arranged. After resist roller pair 16 makes the print sheet 17 to which paper is fed towards a printing cylinder 1 from the feed equipment which is not illustrated suspend, it takes timing and feeds with it between the peripheral face of a printing cylinder 1, and the press member mentioned later.

[0034] The press roller 18 as a press member is arranged in the print sheet conveyance direction downstream from resist roller pair 16. The press roller 18 has fixed free [rotation] to the side plate which is not illustrated at support **** pivot 18a, and it is rocked by the rocking means which is not illustrated, and as shown in drawing 1 , it is constituted so that the two-dot chain line location of drawing which contacts the continuous-line location of drawing and the peripheral face of a printing cylinder 1 which were estranged from the peripheral face of a printing cylinder 1 may be occupied alternatively.

[0035] the location between resist roller pair 16 and a press roller 18 -- a resist roller pair -- the 1st sensor 19 which detects the tip of the print sheet 17 conveyed by 16 is arranged. The output signal from the 1st sensor 19 is inputted into the control means which is not illustrated.

[0036] The conveyance belt 20 as 1st form conveyance means is arranged in the print sheet conveyance direction downstream from the press roller 18. The conveyance belt 20 mainly consists of the driving roller 21, a follower roller 22, an endless belt 23, and an aspirator 24. The rotation drive of the driving roller 21 is carried out by the driving means with a peripheral velocity a little quicker than the peripheral velocity of a printing cylinder 1. The follower roller 22 is supported free [rotation] by the side plate and bracket which are not illustrated. Between the driving roller 21 and the follower roller 22, the endless belt 23 which has two or more puncturing is stretched by the front face, the follower roller 22 rotates on the turning effort of a driving roller 21, and the endless belt 23 moves in the direction of an arrow head shown in drawing 1 . The aspirator 24 is arranged inside the endless belt 23, operates at the time of the drive of a driving roller 21, and attracts air. The conveyance belt 20 adsorbs the non-printed field of a print sheet 17 on the front face of the endless belt 23, and conveys a print sheet 17 to a lower stream of a river.

[0037] It is the lower part of the conveyance belt 20, and the exfoliation pawl 25 as 1st exfoliation means is arranged near the peripheral face of a printing cylinder 1. The exfoliation pawl 25 is supported by pivot 25a, and is rotated with the rotation means which is not illustrated. Moreover, in order to make a print sheet 17 exfoliate from the peripheral face of a printing cylinder 1 near the exfoliation pawl 25, and in order to make the print sheet 17 in which the tip exfoliated from the peripheral face of a printing cylinder 1 with the exfoliation pawl 25 convey certainly by the conveyance belt 20, the blower 26 which ventilates towards a print sheet 17 is arranged.

[0038] The 2nd sensor 27 which detects the tip of the print sheet 17 conveyed by the conveyance belt 20, and the guide plate 28 guided towards between the 2nd printing cylinder and adsorption drums

which mention a print sheet 17 later are arranged in the print sheet conveyance direction downstream of the conveyance belt 20. The output signal from the 2nd sensor 27 is inputted into the control means which is not illustrated, and opening which is not illustrated for the optical axis of the 2nd sensor 27 to pass is formed in the guide plate 28.

[0039] The printing cylinder 31 as the 2nd printing cylinder which is arranged in the print sheet conveyance direction downstream of a guide plate 28 so that the peripheral face may be located in the non-printed field of the print sheet 17 printed with the printing cylinder 1, and the location which counters, and prints to the non-printed field of a print sheet 17, The exfoliation pawl 55 as the ink supply means 35 as 2nd ink supply means, the platemaking means 40, the cutting means 41, and 2nd exfoliation means is arranged, respectively. Since the configuration incidental to a printing cylinder 31, the ink supply means 35, the platemaking means 40, the cutting means 41, the exfoliation pawl 55, and these is the same as that of the above-mentioned printing cylinder 1, the ink supply means 5, the platemaking means 10, the cutting means 11, the exfoliation pawl 25, and abbreviation, the sign which added 30 to the above-mentioned configuration shows to drawing 1, only the part which is different constitutionally supplements with explanation, and explanation of other parts omits.

[0040] The pivot 32 of the printing cylinder 31 which served as the ink delivery pipe has two or more puncturing 32a on that front face, and supplies the ink which flows out of this puncturing 32a to the contiguity section of an inking roller 36 and the doctor roller 37. Surface layer 36a which consists of oilproof elastic members (a fluororubber, high nitrile rubber, resin, etc.) is formed in the front face of an inking roller 36.

[0041] The adsorption drum 29 and an adsorption member supply means 30 to supply an adsorption member to the peripheral face of this adsorption drum 29 are arranged in the lower part opposite location of a printing cylinder 31. The adsorption drum 29 is presenting the shape of a cylinder from which a part of the peripheral face was released, it is supported free [rotation] by using as a pivot eccentric shaft 29a held free [rocking to the side plate which is not illustrated], and a rotation drive is carried out in the direction of a counterclockwise rotation by the driving means which is not illustrated with the same peripheral velocity as a printing cylinder 1 and a printing cylinder 31. The presser-foot pawls 46 and 47 are arranged in the both ends of the release section of the adsorption drum 29 rotatable, respectively, and the point of each presser-foot pawls 46 and 47 is energized by the both ends of the release section with the energization means which is not illustrated, respectively. As shown in drawing 2, arms 48 and 48 are attached in the axis end section of the pivots 46a and 47a of each presser-foot pawls 46 and 47, and the cam follower 49 which can rotate freely is attached in the point. Moreover, the cam plate 54 which can move to the side plate 53 by the side of a mimeograph airline printer body freely is arranged. The cam plate 54 has guide rod 54a and piece of connection 54b which can slide freely to the side plate 53. Piece of connection 54b is presenting the abbreviation configuration for L characters which the free end bent, and the plunger of solenoid 54c which moves the cam plate 54 to the point of the free end by the command from the control means which is not illustrated, and the **** spring 54d other end in which the end was attached by the mimeograph airline printer body are attached. The cam plate 54 is usually put on the continuous-line location of drawing according to the **** spring 54d energization force by this configuration at the time, and when solenoid 54c excites by the command from the control means which is not illustrated, it is put on the two-dot chain line location of drawing. If the cam plate 54 occupies the two-dot chain line location of drawing, the cam plate 54 and cam followers 49 and 49 will contact, it will press down with rotation of the adsorption drum 29, and pawls 46 and 47 will rotate.

[0042] The adsorption member supply means 30 is arranged by the lower left direction of the adsorption drum 29. The adsorption member supply means 30 pinches and conveys the adsorption sheet 38 as an adsorption member pulled out from sheet roll 38a supported free [rotation] by core material 38b. the conveyance roller pair which consists of driving roller 50a and follower roller 50b -- with 50 It is supported free [rotation] by the cutting means 51 which consists of upper cutting-edge 51a rotated by the migration means which is not illustrated, and lower cutting-edge 51b of immobilization, and the rocking means which is not illustrated, and mainly consists of a peripheral face of the adsorption drum

29, and an adsorption member press roller 52 which can be attached and detached.

[0043] The adsorption sheet 38 is a roll sheet and the physical properties of it are the same as that of what was indicated by the 5th page lower right **** of ten lines of JP,2-16053,A thru/or the 12th line. In drawing 1, a rotation drive is carried out in the direction of a counterclockwise rotation by the stepping motor which is not illustrated, and with the energization means which is not illustrated, with follower roller 50b by which the pressure welding was carried out in the peripheral face, driving roller 50a turns the adsorption sheet 38 to the peripheral face of the adsorption drum 29, and conveys it.

[0044] From the arrangement location of a printing cylinder 31 and the adsorption drum 29, a guide plate 61 and the conveyance belt 62 as 2nd form conveyance means are arranged in the print sheet conveyance direction downstream, and the paper output tray 60 is arranged in the downstream. The conveyance belt 62 mainly consists of the driving roller 56, a follower roller 57, an endless belt 58, and an aspirator 59. The paper output tray 60 is attached in the mimeograph airline printer body.

[0045] A guide plate 61 shows the print sheet [finishing / double-sided printing] 17 which was printed on the printing cylinder 31 and the adsorption drum 29, and exfoliated from the peripheral face of a printing cylinder 31 by the exfoliation pawl 55 to the conveyance belt 62. a driving roller 56 -- a driving means -- the peripheral velocity of a printing cylinder 31, and abbreviation -- a rotation drive is carried out with the same peripheral velocity, and the follower roller 57 is supported free [rotation] by the side plate and bracket which are not illustrated. Between the driving roller 56 and the follower roller 57, the endless belt 58 which has two or more puncturing is stretched by the front face, the follower roller 57 rotates on the turning effort of a driving roller 56, and the endless belt 58 moves in the direction of an arrow head shown in drawing 1. The aspirator 59 is arranged inside the endless belt 58, operates at the time of the drive of a driving roller 56, and attracts air. The conveyance belt 62 adsorbs the print sheet [finishing / double-sided printing] 17 on the front face of the endless belt 58, and conveys a print sheet 17 to a paper output tray 60.

[0046] Hereafter, actuation is explained. When a manuscript is set to the manuscript read station which is not illustrated and a platemaking start key is pushed by the operator, a used master exfoliates from the peripheral face of a printing cylinder 1 with the ** version equipment which a rotation drive is carried out by the printing cylinder driving means, and a printing cylinder 1 does not illustrate. Then, a clamper 4 rotates and suspends a printing cylinder 1 to the ** version position in readiness in which it is located just under. It energizes to the heater element of a thermal head 14 at the shape of a pulse via the A/D converter after the information which the manuscript image was read while the platen roller 13 started rotation, when the clamper 4 was wide opened by the closing motion means which is not illustrated and the printing cylinder 1 changed into the ** version standby condition, and was read in the manuscript was changed into the electrical signal by CCD etc., and a control unit.

[0047] The master 15 pulled out from master roll 15a by the platen roller 13 is conveyed heating melting punching being carried out by the thermal head 14. and from the number of steps of the stepping motor which is not illustrated which drives a platen roller 13, if the control means which is not illustrated judges that the tip of the engraved master 15 reached the predetermined location between the stage section 3 and a clamper 4, a clamper 4 will close with a closing motion means -- having -- a printing cylinder 1 -- a master bearer rate and abbreviation -- rotation is started in the direction of a counterclockwise rotation with the same peripheral velocity, and the engraved master 15 is looped around. And if it is judged that the platemaking for the 1st edition was completed, rotation of a platen roller 13 will stop and a master 15 will be cut from the number of steps of a stepping motor which drives a platen roller 13 by the cutting means 11. The cut master 15 is pulled out by rotation of a printing cylinder 1, and looping around of the master 15 to a printing cylinder 1 completes it.

[0048] If looping around of the master 15 to a printing cylinder 1 is completed, when a manuscript is again set to a manuscript read station and a platemaking start key is again pushed by the operator, a used master will exfoliate from the peripheral face of a printing cylinder 31 with the ** version equipment which a rotation drive is carried out by the printing cylinder driving means, and a printing cylinder 31 does not illustrate. Then, if a printing cylinder 31 rotates to the ** version position in readiness in which a clamper 34 is located right above, and stops, a clamper 34 is wide opened by the closing motion means

which is not illustrated and a printing cylinder 31 will be in the ** version standby condition After the information which the manuscript image was read while the platen roller 43 started rotation, and was read in the manuscript is changed into an electrical signal by CCD etc., it is energized in the shape of a pulse to the heater element of a thermal head 44 via an A/D converter and a control unit.

[0049] The master 45 pulled out from master roll 45a by the platen roller 43 From the number of steps of the stepping motor which is not illustrated which is conveyed heating melting punching being carried out by the thermal head 44, and drives a platen roller 43 If the control means which is not illustrated judges that the tip of the engraved master 45 reached the predetermined location between the stage section 33 and a clamper 34 a clamper 34 closes with a closing motion means -- having -- a printing cylinder 31 -- a master bearer rate and abbreviation -- the master 45 which started rotation in the direction of a clockwise rotation, and was engraved in it with the same peripheral velocity is looped around. And if it is judged that the platemaking for the 1st edition was completed, rotation of a platen roller 43 will stop and a master 45 will be cut from the number of steps of a stepping motor which drives a platen roller 43 by the cutting means 41. The cut master 45 is pulled out by rotation of a printing cylinder 31, and looping around of the master 45 to a printing cylinder 31 completes it.

[0050] when the rotation drive of the adsorption drum 29 is carried out by it while solenoid 54c is excited by that looping around of the master 45 to a printing cylinder 31 is performed, simultaneously the command from a control means which is not illustrated, and the presser-foot pawls 46 and 47 rotate by it, the used adsorption sheet 38 exfoliates from the peripheral face of the adsorption drum 29. then, the conveyance roller pair after the adsorption drum 29 rotates to a position -- 50 starts rotation and the adsorption sheet 38 is conveyed towards the peripheral face of the adsorption drum 29. When the adsorption member press roller 52 rocks, after the adsorption sheet 38 conveyed to near the peripheral face of the adsorption drum 29 is pressed by the peripheral face of the adsorption drum 29, by canceling the excitation condition of solenoid 54c according to the command from a control means, it presses down the end and is stopped on the peripheral face of the adsorption drum 29 by the pawl 47. then, the adsorption drum 29 -- rotating -- the peripheral face top -- the adsorption sheet 38 -- looping around -- a conveyance roller pair -- if the control means which is not illustrated judges that the adsorption sheet 38 of predetermined die length was conveyed from the number of steps of a stepping motor which drives 50, the cutting means 51 will operate and the adsorption sheet 38 will be cut. Also after that, the adsorption drum 29 continues rotation and loops around the adsorption sheet 38 on the peripheral face. And by canceling the excitation condition of solenoid 54c according to the command from a control means, the adsorption sheet 38 presses down the other end, is stopped on the peripheral face of the adsorption drum 29 by the pawl 46, and looping around of the adsorption sheet 38 to the adsorption drum 29 top completes it.

[0051] if looping around of the master 15 to a printing cylinder 1 and a printing cylinder 31 and a master 45 is completed, one sheet of print sheet 17 will carry out separation feed from the feed equipment which is not illustrated -- having -- a resist roller pair -- after timing is taken by 16, it is fed between a printing cylinder 1 and a press roller 18. If the tip of a print sheet 17 is detected by the 1st sensor 19 at this time, a signal is sent to the control means which is not illustrated from the 1st sensor 19, by the command from a control means, a press roller 18 will descend and a print sheet 17 will be pressed to the peripheral face of a printing cylinder 1. After the printing cylinder aperture which the ink supplied to the inner skin of a printing cylinder 1 from the ink supply means 5 does not illustrate by this press, and the punch station of a master 15 are filled up, it transfers to a print sheet 17. With the exfoliation pawl 25, from the point, the print sheet 17 to which ink was transferred is pushed against the endless belt 23 by the ventilation from a blower 26 while it exfoliates from the peripheral face of a printing cylinder 1. Thereby, the print sheet 17 kept away the point from the exfoliation pawl 25, and has prevented the scratch dirt caused when a print sheet 17 contacts the exfoliation pawl 25.

[0052] The conveyance belt 20 adsorbs and conveys the non-printed field of a print sheet 17 on the endless belt 23 with an aspirator 24, and conveys a print sheet 17 between a printing cylinder 31 and the adsorption drum 29. The adsorption drum 29 is put on the location which estranged the peripheral face with the peripheral face of a printing cylinder 31 until a print sheet 17 is conveyed. If a print sheet 17 is

conveyed and the tip of a print sheet 17 is detected by the 2nd sensor 27 with the conveyance belt 20, while being rocked by the rocking means which is not illustrated and making the peripheral face contact the peripheral face of a printing cylinder 31, the rotation drive of the adsorption drum 29 will be carried out with the same peripheral velocity as a printing cylinder 31 by the driving means which is not illustrated. From being pressed by the printing cylinder 31 on the adsorption drum 29, after the printing cylinder aperture which the ink supplied to the inner skin of a printing cylinder 31 from the ink supply means 35 does not illustrate, and the punch station of a master 45 are filled up, it transfers to the non-printed field of the print sheet 17 conveyed between the printing cylinder 31 and the adsorption drum 29. While ink is supplied to a print sheet 17 with a printing cylinder 31, when the adsorption drum 29 presses the printing side to which ink was supplied from the printing cylinder 1, the ink of the surplus supplied from the printing cylinder 1 is adsorbed by the adsorption sheet 38.

[0053] Then, with the exfoliation pawl 55, from that point, the print sheet 17 which had both sides printed exfoliates from the peripheral face of a printing cylinder 31, is conveyed with the conveyance belt 62, is discharged on a paper output tray 60, and actuation with a version completes it. Since the printing side of the print sheet 17 which contacts the endless belt 58 is adsorbed by the adsorption sheet 38 in excessive ink when a print sheet 17 is conveyed by the conveyance belt 62, generating of the grinding dirt to the printing side of a print sheet 17 is prevented. Moreover, since it conveys the conveyance belt 62 attracting a print sheet 17 after a print sheet 17 exfoliates from the peripheral face of a printing cylinder 31 with the exfoliation pawl 55, a print sheet 17 keeps away the field to which ink was supplied from the printing cylinder 31 from the exfoliation pawl 55, and scratch dirt is prevented.

[0054] Drawing 3 is the outline side elevation of a mimeograph airline printer important section showing the 2nd example of this invention. This 2nd example is different from the 1st example in the point of having replaced with the adsorption drum 29, having replaced the press drum 63 with the adsorption member supply means 30 again, and having established the cleaning means 64, the same sign as the same part as the other 1st examples is attached, and each detailed explanation is omitted.

[0055] The press drum 63 of the shape of a cylinder which has surface layer 63b which becomes a peripheral face from a low coefficient-of-friction member is arranged in the lower part opposite location of a printing cylinder 31. The press drum 63 is supported free [rotation] by using as a pivot eccentric shaft 63a held free [rocking to the side plate which is not illustrated], and a rotation drive is carried out in the direction of a counterclockwise rotation by the driving means which is not illustrated with the same peripheral velocity as a printing cylinder 1 and a printing cylinder 31. The press drum 63 is rocked by the rocking means which is not illustrated, and is positioned alternatively in the location which shows the peripheral face in drawing which contacts the peripheral face of a printing cylinder 31 as a continuous line, and the location which shows the peripheral face in drawing estranged from the peripheral face of a printing cylinder 31 with a two-dot chain line. Surface layer 63b is formed by tetrafluoroethylene resin.

[0056] The cleaning means 64 is arranged in the lower part opposite location of the press drum 63. The cleaning means 64 mainly consists of the spreading roller 65, a squeezing roller 66, the 1st scraping blade 67, the 2nd scraping blade 68, a strainer 69, a tank 70, and pump 71 grade, and supplies a cleaner 72 to the front face of the press drum 63. The cleaning means 64 is constituted so that the press drum 63 may be interlocked with and it may move up and down by the driving means which is not illustrated.

[0057] The spreading roller 65 is supported free [rotation] by the side plate which is not illustrated, and a rotation drive is carried out by the driving means which is not illustrated. A squeezing roller 66 is supported free [rotation] by the side plate which is not illustrated, and is carrying out the pressure welding of the peripheral face to the peripheral face of the spreading roller 65 by predetermined thrust, and follower rotation is carried out with rotation of the spreading roller 65. A squeezing roller 66 supplies a cleaner 72 to the peripheral face of the spreading roller 65. The 1st scraping blade 67 is arranged in the location which contacts the peripheral face of the press drum 63 in the point, and removes an excessive cleaner from the peripheral face of the press drum 63. The 2nd scraping blade 68 makes the point contact the peripheral face of the spreading roller 65, is arranged, and removes an excessive cleaner from the peripheral face of the spreading roller 65. A strainer 69 filters the cleaner 72

removed with the 1st scraping blade 67 and the 2nd scraping blade 68, and sends it to a tank 70. The cleaner 72 returned to the tank 70 is sucked up by the tray 73 with a pump 71, and is supplied to the spreading roller 65 by the squeezing roller 66. At this time, actuation of a pump 71 is regulated by the liquid level sensor which was formed in the interior of a tray 73 and which is not illustrated, and the cleaner 72 of a constant rate is always controlled so that a tray 73 is supplied from a tank 70. As a cleaner 72, petroleum, such as benzine, kerosene, gas oil, and a gasoline, or neutral detergent is used.

[0058] Hereafter, actuation of the 2nd example is explained. If a manuscript is set to the manuscript read station which is not illustrated and a platemaking start key is pushed by the operator, looping around of the master 15 to a printing cylinder 1 will be performed like the 1st example. If a manuscript is again set to a manuscript read station after the completion of looping around and a platemaking start key is again pushed by the operator, looping around of the master 45 to a printing cylinder 31 will be performed. The press drum 63 is positioned in the two-dot chain line location of drawing which estranged that peripheral face from the peripheral face of a printing cylinder 31 at the time of this looping-around actuation. While a pump 71 operates and pumping up a cleaner 72 from a tank 70 on a tray 73 in parallel to looping-around actuation, the driving means which is not illustrated operates and the spreading roller 65 is rotated in the direction of a clockwise rotation. At this time, the rotation drive is carried out in the direction of a counterclockwise rotation by the driving means which does not illustrate the press drum 63, either, and a cleaner 72 is supplied on the peripheral face of the press drum 63.

[0059] if looping around of the master 15 to a printing cylinder 1 and a printing cylinder 31 and a master 45 is completed, one sheet of print sheet 17 will carry out separation feed from the feed equipment which is not illustrated -- having -- a resist roller pair -- after timing is taken by 16, it is fed between a printing cylinder 1 and a press roller 18. If the tip of a print sheet 17 is detected by the 1st sensor 19 at this time, a signal is sent to the control means which is not illustrated from the 1st sensor 19, by the command from a control means, a press roller 18 will descend and a print sheet 17 will be pressed to the peripheral face of a printing cylinder 1. After the printing cylinder aperture which the ink supplied to the inner skin of a printing cylinder 1 from the ink supply means 5 does not illustrate by this press, and the punch station of a master 15 are filled up, it transfers to a print sheet 17. With the exfoliation pawl 25, from the point, the print sheet 17 to which ink was transferred is pushed against the endless belt 23 by the ventilation from a blower 26 while it exfoliates from the peripheral face of a printing cylinder 1.

[0060] The conveyance belt 20 adsorbs and conveys the non-printed field of a print sheet 17 on the endless belt 23 with an aspirator 24, and conveys a print sheet 17 between a printing cylinder 31 and the press drum 63. The press drum 63 is put on the location which estranged the peripheral face with the peripheral face of a printing cylinder 31 until a print sheet 17 is conveyed. If a print sheet 17 is conveyed and the tip of a print sheet 17 is detected by the 2nd sensor 27 with the conveyance belt 20, while being rocked by the rocking means which is not illustrated and making the peripheral face contact the peripheral face of a printing cylinder 31, the rotation drive of the press drum 63 will be carried out with the same peripheral velocity as a printing cylinder 31 by the driving means which is not illustrated. From being pressed by the printing cylinder 31 on the press drum 63, after the printing cylinder aperture which the ink supplied to the inner skin of a printing cylinder 31 from the ink supply means 35 does not illustrate, and the punch station of a master 45 are filled up, it transfers to the non-printed field of the print sheet 17 conveyed between the printing cylinder 31 and the press drum 63. While ink is supplied to a print sheet 17 with a printing cylinder 31, when the press drum 63 presses the printing side to which ink was supplied from the printing cylinder 1, the cleaning means 64 cleans continuously the ink in which the press drum 63 adsorbed the ink of the surplus supplied from the printing cylinder 1 by surface layer 63b adsorbing at the surface layer 63b.

[0061] Then, with the exfoliation pawl 55, from that point, the print sheet 17 which had both sides printed exfoliates from the peripheral face of a printing cylinder 31, is conveyed with the conveyance belt 62, is discharged on a paper output tray 60, and actuation with a version completes it. Since the printing side of the print sheet 17 which contacts the endless belt 58 is adsorbed by surface layer 63b in excessive ink when a print sheet 17 is conveyed by the conveyance belt 62, generating of the grinding dirt to the printing side of a print sheet 17 is prevented.

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[0062] Drawing 4 is the outline side elevation of a mimeograph airline printer important section showing the 3rd example of this invention. The point of having replaced this 3rd example with the printing cylinder 31, the ink supply means 35, the platemaking means 40, and the exfoliation pawl 55 grade, and having formed the 2nd press roller 74 as a printed form press means, In the point which the side plate which does not illustrate pivot 29b which supports the adsorption drum 29 was made to support free [rotation], it is different from the 1st example, the same sign as the same part as the other 1st examples is attached, and each detailed explanation is omitted.

[0063] As it fixes to pivot 74a supported free [rotation] by the side plate which is not illustrated and is shown in drawing 4 , the 2nd press roller 74 is rocked by the rocking means which is not illustrated, and it is constituted so that the two-dot chain line location of drawing which contacts the continuous-line location of drawing and the peripheral face of the adsorption drum 29 which were estranged from the peripheral face of the adsorption drum 29 may be occupied alternatively.

[0064] Hereafter, actuation of the 3rd example is explained. When a manuscript is set to the manuscript read station which is not illustrated and a platemaking start key is pushed by the operator, a used master exfoliates from the peripheral face of a printing cylinder 1 with the ** version equipment which a rotation drive is carried out by the printing cylinder driving means, and a printing cylinder 1 does not illustrate. Then, a clamper 4 rotates and suspends a printing cylinder 1 to the ** version position in readiness in which it is located just under. It energizes to the heater element of a thermal head 14 at the shape of a pulse via the A/D converter after the information which the manuscript image was read while the platen roller 13 started rotation, when the clamper 4 was wide opened by the closing motion means which is not illustrated and the printing cylinder 1 changed into the ** version standby condition, and was read in the manuscript was changed into the electrical signal by CCD etc., and a control unit.

[0065] The master 15 pulled out from master roll 15a by the platen roller 13 is conveyed heating melting punching being carried out by the thermal head 14. and from the number of steps of the stepping motor which is not illustrated which drives a platen roller 13, if the control means which is not illustrated judges that the tip of the engraved master 15 reached the predetermined location between the stage section 3 and a clamper 4, a clamper 4 will close with a closing motion means -- having -- a printing cylinder 1 -- a master bearer rate and abbreviation -- rotation is started in the direction of a counterclockwise rotation with the same peripheral velocity, and the engraved master 15 is looped around. And if it is judged that the platemaking for the 1st edition was completed, rotation of a platen roller 13 will stop and a master 15 will be cut from the number of steps of a stepping motor which drives a platen roller 13 by the cutting means 11. The cut master 15 is pulled out by rotation of a printing cylinder 1, and looping around of the master 15 to a printing cylinder 1 completes it.

[0066] when the rotation drive of the adsorption drum 29 is carried out by it while solenoid 54c is excited by that looping around of the master 15 to a printing cylinder 1 is performed, simultaneously the command from a control means which is not illustrated, and the presser-foot pawls 46 and 47 rotate by it, the used adsorption sheet 38 exfoliates from the peripheral face of the adsorption drum 29. then, the conveyance roller pair after the adsorption drum 29 rotates to a position -- 50 starts rotation and the adsorption sheet 38 is conveyed towards the peripheral face of the adsorption drum 29. When the adsorption member press roller 52 rocks, after the adsorption sheet 38 conveyed to near the peripheral face of the adsorption drum 29 is pressed by the peripheral face of the adsorption drum 29, by canceling the excitation condition of solenoid 54c according to the command from a control means, it presses down the end and is stopped on the peripheral face of the adsorption drum 29 by the pawl 47. then, the adsorption drum 29 -- rotating -- the peripheral face top -- the adsorption sheet 38 -- looping around -- a conveyance roller pair -- if the control means which is not illustrated judges that the adsorption sheet 38 of predetermined die length was conveyed from the number of steps of a stepping motor which drives 50, the cutting means 51 will operate and the adsorption sheet 38 will be cut. Also after that, the adsorption drum 29 continues rotation and loops around the adsorption sheet 38 on the peripheral face. And by canceling the excitation condition of solenoid 54c according to the command from a control means, the adsorption sheet 38 presses down the other end, is stopped on the peripheral face of the adsorption drum 29 by the pawl 46, and looping around of the adsorption sheet 38 to the adsorption

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(X) . . .

drum 29 top completes it.

[0067] if looping around of the master 15 to a printing cylinder 1 is completed, one sheet of print sheet 17 will carry out separation feed from the feed equipment which is not illustrated -- having -- a resist roller pair -- after timing is taken by 16, it is fed between a printing cylinder 1 and a press roller 18. If the tip of a print sheet 17 is detected by the 1st sensor 19 at this time, a signal is sent to the control means which is not illustrated from the 1st sensor 19, by the command from a control means, a press roller 18 will descend and a print sheet 17 will be pressed to the peripheral face of a printing cylinder 1. After the printing cylinder aperture which the ink supplied to the inner skin of a printing cylinder 1 from the ink supply means 5 does not illustrate by this press, and the punch station of a master 15 are filled up, it transfers to a print sheet 17. With the exfoliation pawl 25, from the point, the print sheet 17 to which ink was transferred is pushed against the endless belt 23 by the ventilation from a blower 26 while it exfoliates from the peripheral face of a printing cylinder 1.

[0068] The conveyance belt 20 adsorbs and conveys the non-printed side of a print sheet 17 on the endless belt 23 with an aspirator 24, and conveys a print sheet 17 between the 2nd press roller 74 and the adsorption drum 29. The 2nd press roller 74 is put on the continuous-line location of drawing which estranged the peripheral face with the peripheral face of the adsorption drum 29 until a print sheet 17 is conveyed. When a print sheet 17 is conveyed and the tip of a print sheet 17 is detected by the 2nd sensor 27 with the conveyance belt 20, the 2nd press roller 74 is rocked by the rocking means which is not illustrated, and makes the peripheral face contact the peripheral face of the adsorption drum 29. The print sheet 17 conveyed between the 2nd press roller 74 and the adsorption drum 29 is pressed by the adsorption drum 29 from being pressed by the 2nd press roller 74 in the printing side to which ink was supplied from the printing cylinder 1, and the ink of the surplus supplied from the printing cylinder 1 is adsorbed by the adsorption sheet 38.

[0069] Then, after a print sheet 17 is guided with a guide plate 61, it is conveyed with the conveyance belt 62, is discharged on a paper output tray 60, and actuation with a version completes it. Since the ink of the printing side of the following print sheet does not imprint at the rear face of the front print sheet 17 even if the following print sheet is loaded on the front print sheet 17, since the printing side of a print sheet 17 is adsorbed by the adsorption sheet 38 in excessive ink, generating of the flesh-side projection to a print sheet 17 is prevented.

[0070] As a modification of the 1st thru/or the 3rd example, as shown in drawing 5 (a) and (b), it is good also as a configuration which forms the heater 75 as a heating means in the interior of the adsorption drum 29 or the press drum 63, and controls the temperature of this heater 75 by the temperature control means 76. Thus, while stuffing into a print sheet 17 the ink of the surplus supplied on the print sheet 17 by raising the temperature of the image section formed in the printing side of the print sheet 17 which contacts each drum by constituting, and raising the fluidity of ink, absorption desiccation of ink can be promoted and generating of grinding dirt or flesh-side projection can be prevented further. Moreover, it replaces with a heater 75 at the temperature control means 76, opening is formed in the flange which was attached in the end face of the adsorption drum 29 or the press drum 63 and which is not illustrated, it lets this opening pass, and the operation effectiveness same also as a configuration which ventilates warm air is acquired from the warm air machine which was formed in the mimeograph airline printer body and which is not illustrated.

[0071] As a modification of the 1st or 3rd example, it may replace with the adsorption sheet 38 and the adsorption sheet which consists of what mixed Japanese paper fiber or Japanese paper fiber, and a synthetic fiber may be used. A cost cut can be aimed at, while it adsorbs promptly and the ink of the surplus transferred to the adsorption sheet by considering as such a configuration can prevent generating of grinding dirt or flesh-side projection further.

[0072] furthermore, it is shown in drawing 6 as a modification of the 1st or 3rd example -- as -- a conveyance roller pair -- as shown in the configuration of 50 which arranged the hydrophobic member spreading means 77 caudad, or drawing 7, it is good also as a configuration of the adsorption drum 29 which arranged the hydrophobic member spreading means 77 caudad. The hydrophobic member spreading means 77 mainly consists of a case 78, a roller 79, and a hydrophobic member 80. The case 78

is attached in the mimeograph airline printer body free [attachment and detachment], and **** the hydrophobic member 80 inside. The roller 79 is supported by the case 78 free [rotation], when a case 78 is attached in a predetermined location, the pressure welding of it is carried out to follower roller 50b or the adsorption drum 29, is taken, and is carried out the surroundings. Dimethyl chlorosilicane etc. is used as a hydrophobic member 80. Since the hydrophobicity of the adsorption sheet 38 improves by considering as such a configuration, the ink adsorbent of the adsorption sheet 38 can improve and generating of grinding dirt or flesh-side projection can be prevented further. Moreover, even if it uses the sheet roll which it replaced with sheet roll 38a, and sinking in etc. carried out the hydrophobic member, and performed hydrophobing processing instead of establishing the hydrophobic member spreading means 77, the same operation effectiveness is acquired.

[0073] Furthermore, as it replaces with the adsorption drum 29 as a modification of the 1st or 3rd example at the adsorption member supply means 30 and is shown in drawing 8, the interior may be equipped with the adsorption member supply roller 81 and the adsorption member winding roller 82 by which a rotation drive is carried out, the rotation drive of each rollers 81 and 82 may carry out, and the adsorption drum 83 constituted so that only the part which uses the adsorption sheet 38 might be supplied on the peripheral face may use.

[0074] In the 1st thru/or the 3rd example, although the exfoliation pawl 25 was used as 1st exfoliation means and the exfoliation pawl 55 was used as 2nd exfoliation means, it may replace with each exfoliation pawls 25 and 55, and the exfoliation means which consists of a blower fan etc. may be used. Moreover, although the conveyance belt 62 which carries out adsorption conveyance of the print sheet 17 as 2nd form conveyance means was used in the 1st thru/or the 3rd example, it may replace with this and a form conveyance means by which a form conveyance means by which the free roller currently indicated by JP,59-59362,U was provided, and the conveyance koro pair were provided, or a form conveyance means by which the jump plate currently indicated by JP,60-148864,A was provided may be used. Furthermore, the conveyance belt 62 may be omitted, a guide plate 61 may be extended to the upper part of a paper output tray 60, and a conveyance means may be constituted.

[0075]

[Effect of the Invention] According to invention according to claim 1, the print sheet which had the 1st field printed with the 1st printing cylinder While exfoliating from the 1st printing cylinder with the 1st exfoliation means, being conveyed with the 1st form conveyance means and printing the 2nd field with the 2nd printing cylinder Since it is discharged by the paper output tray with the 2nd conveyance means after removing excessive ink from the 1st field and exfoliating from the 2nd printing cylinder with the 2nd exfoliation means by the adsorption member Contacting a conveyance means in the printing side where excessive ink adhered is prevented, and it can prevent generating of grinding dirt.

[0076] According to invention according to claim 2, the print sheet which had the 1st field printed with the 1st printing cylinder While exfoliating from the 1st printing cylinder with the 1st exfoliation means, being conveyed with the 1st form conveyance means and printing the 2nd field with the 2nd printing cylinder Since it is discharged by the paper output tray with the 2nd conveyance means after removing excessive ink from the 1st field and exfoliating from the 2nd printing cylinder with the 2nd exfoliation means on a press drum Contacting a conveyance means in the printing side where excessive ink adhered is prevented, and it can prevent generating of grinding dirt.

[0077] According to invention according to claim 3, the print sheet which had the 1st field printed with the 1st printing cylinder While exfoliating from the 1st printing cylinder with the 1st exfoliation means, being conveyed with the 1st form conveyance means and printing the 2nd field with the 2nd printing cylinder Since it is discharged by the paper output tray with the 2nd conveyance means after removing excessive ink from the 1st field and exfoliating from the 2nd printing cylinder with the 2nd exfoliation means on the press drum on which the surface layer which consists of a low coefficient-of-friction member was formed The amount of ink which contacting a conveyance means in the printing side where excessive ink adhered is prevented, and it can prevent generating of grinding dirt, and adheres to the peripheral face of a press drum decreases. The press drum peripheral face in a cleaning means can be cleaned easily, and degradation of a cleaner can be prevented.

(a) (4) (b) (1)

[0078] Since the temperature of the 1st field of the print sheet which a press drum is heated and contacts a press drum rises according to invention according to claim 4 While stuffing into a print sheet the ink of the surplus supplied on the print sheet when the temperature of the image section formed in the printing side of a print sheet rose and the fluidity of ink improved, absorption desiccation of ink can be promoted and generating of grinding dirt can be prevented further.

[0079] According to invention according to claim 5, the ink of the surplus transferred to the print sheet Since an adsorption member is adsorbed when a printed form is pressed by the adsorption drum with a printed form press means Even if the following printed form is loaded on the printed form discharged by the paper output tray, the ink of the following printed form cannot transfer to the rear face of a front printed form, but generating of flesh-side projection can be prevented.

[0080] According to invention according to claim 6, since the adsorption member which consists of what mixed Japanese paper fiber or Japanese paper fiber, and a synthetic fiber is adsorbed, the ink of the surplus transferred to the print sheet can aim at a cost cut while it adsorbs promptly and the ink of the surplus transferred to the adsorption member can prevent generating of grinding dirt or flesh-side projection further.

[0081] According to invention according to claim 7, since a hydrophobic member spreading means gives a hydrophobic member to an adsorption member, the ink adsorbent of an adsorption member can improve and generating of grinding dirt or flesh-side projection can be prevented further.

[0082] According to invention according to claim 8, since hydrophobing processing is performed to the adsorption member, the ink adsorbent of an adsorption member can improve and generating of grinding dirt or flesh-side projection can be prevented further.

[0083] According to invention according to claim 9, since the adsorption member which consists of what mixed the Japanese paper fiber or Japanese paper fiber to which hydrophobing processing was performed, and a synthetic fiber is adsorbed, the ink adsorbent of ink of the surplus transferred to the print sheet of an adsorption member can improve, and it can prevent generating of grinding dirt or flesh-side projection further.

[0084] Since the temperature of the field of the print sheet which an adsorption drum is heated and contacts an adsorption drum rises according to invention according to claim 10 While stuffing into a print sheet the ink of the surplus supplied on the print sheet when the temperature of the image section formed in the printing side of a print sheet rose and the fluidity of ink improved, absorption desiccation of ink can be promoted and generating of grinding dirt or flesh-side projection can be prevented further.

[Translation done.]